REMARKS

In response to the above-identified Office Action, Applicant seeks reconsideration of the application. In this response, no claims have been canceled, no claims have been added, and no claims have been amended. Accordingly, Claims 1-27 are pending.

I.   **35 U.S.C. § 102(e)**

Claims 1-3, 5-10, 12-16, 18-21 and 23-27 are rejected under 35 U.S.C. § 102(e) as being unpatentable by Tani (U.S. Patent Application 2003/0073348). Applicant respectfully traverses this rejection.

Applicant first notes that, to anticipate a claim, every element of the claim must be disclosed within a single reference. Thus, if even one feature of the rejected claims is not found in Tani, Applicant respectfully requests that the rejection of the corresponding claims under 35 U.S.C. § 102(e) as being anticipated by Tani be withdrawn.

As to independent Claim 1, Applicant respectfully submits that Tani fails to disclose a thermal control subsystem that <u>estimates the amount of power</u> used by the microprocessor <u>based on</u> information provided by the at least one counter.

As noted in the original specification, the inventors of the present invention have recognized that the amount of power consumed by a microprocessor during a time interval is related to junction temperature on the die of the microprocessor. One embodiment of the present invention takes advantage of this relationship between the amount of power consumed by the processor and the junction temperature to determine when to activate and deactivate the throttling mechanism to avoid unsafe junction temperature that may cause system degradation or that exceeds system specification.

Accordingly, in one embodiment, the thermal control system is configured to dynamically estimate an amount of power used by a microprocessor during a given time interval by periodically executing software codes in the microprocessor that estimates the power consumption level based on the frequency of various activities occurring within the microprocessor (i.e., based on information provided by the at least one counter). And, in accordance with one embodiment, the thermal control system controls the activation and deactivation of throttling mechanism, based on the estimated power usage, to avoid unsafe junction temperature that may cause system degradation or that exceeds system specification.

Tani discloses a power control device for controlling the power consumption in a processor. In Tani, the power consumption in the processor is controlled according to the power control information stored in the power control registers that is selected by an index signal. However, there is nothing in Tani that teaches or suggests that the power control device is configured to estimate an amount of power used by the microprocessor based on information provided by a counter. It is therefore respectfully submitted that Tani fails to teach or suggest a thermal control subsystem that estimates the amount of power used by the microprocessor based on information provided by the at least one counter, as claimed by Applicant. Accordingly, Applicant respectfully submits that Tani does not anticipate independent Claim 1 or any of its dependent claims.

Analogous arguments and discussion apply to other independent Claims 8, 15 and 19. Specifically, with respect to independent Claims 8, 15 and 19, Applicant respectfully submits that Tani fails to teach or suggest estimating an amount of power used by a microprocessor based on information provided by at least one counter, as discussed above. Accordingly, Applicant respectfully submits that Tani does not anticipate independent Claims 8, 15 and 19 or any of its dependent claims.

As to dependent Claims 2, 9 and 20, Applicant respectfully submits that there is nothing in Tani that teaches or suggests estimating the amount of power used by the microprocessor based on the number of occurrences of at least one activity performed in the microprocessor. The Examiner analysis of Claims 2, 9 and 20 is not understood and is believed to be inaccurate. Applicant does not find this purported teaching of estimating the amount of power used by the microprocessor based on the number of occurrences of at least one activity performed in the microprocessor. Accordingly, Tani does not anticipate Claims 2, 9 and 20.

With respect to dependent Claim 16, Applicant respectfully submits that there is nothing in Tani that teaches or suggests estimating the amount of power used by the microprocessor based on (1) the number of occurrences of at least one activity, (2) current clock frequency and (3) operating voltage level of the microprocessor. Accordingly, Tani does not anticipate Claim 16.

As to dependent Claims 7, 14 and 25, Applicant respectfully submits that Tani fails to teach or suggest that one activity monitored by the thermal control subsystem is at least one of the following activities; (1) floating point operation, (2) cache memory access and (3) instruction

decoding. The Examiner analysis of Claims 7, 14 and 25 is not understood and is believed to be inaccurate. Applicant does not find this purported teaching in Tani. Accordingly, Tani does not anticipate Claims 7, 14 and 25.

In view of the foregoing, Applicant respectfully submits that independent Claims 1, 8, 15, 19 and dependent Claims 2, 7, 9, 14, 16, 20 and 25 are not anticipated by Tani and requests withdrawal of the rejection of these claims. Other dependent Claims 3, 5, 6, 10, 12, 13, 18, 21, 23, 24, 26, and 27 are submitted as not being anticipated by Tani at least for the reasons given in support of their base claims.

II.   **35 U.S.C. § 103(a)**

Claims 4, 11, 17 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tani in view of Kenny et al. (U.S. Patent No. 5,287,292). Applicant respectfully traverses this rejection.

As Claims 4, 11, 17 and 22 are dependent on independent Claims 1, 8, 15 and 19, respectively, the discussion above with regard to the independent claims and Tani applies here. Because Tani does not contain limitations recited in Applicant's independent claims as set forth above, and because Kenny does not cure these deficiencies, the combination of Tani and Kenny does not teach or suggest Applicant's dependent claims. Therefore, Applicant respectfully submits that Claims 4, 11, 17 and 22 are patentable over Tani in view of Kenny.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance, and such action is earnestly solicited at the earliest possible date.
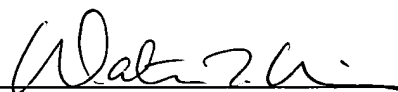
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

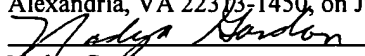BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

Dated: July 1, 2003

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CERTIFICATE OF MAILING:
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 1, 2003

Nadya Gordon   July 1, 2003

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